

Remarks

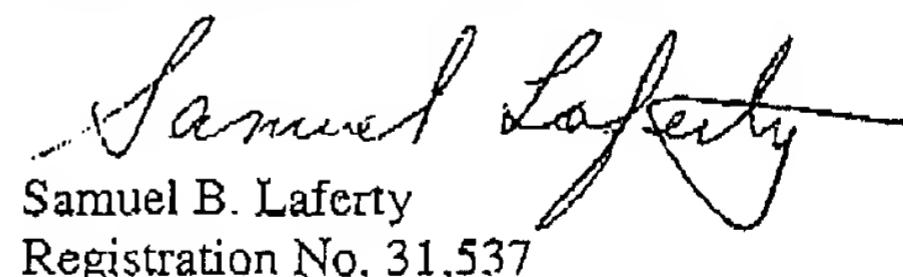
Claims 1, 2 and 4-25 were rejected under 103(a) as being unpatentable over Dorer (U.S. 4, 613, 342). According to the Examiner Examples 2, 3, 5 and 6 disclose reaction conditions where amounts of water are removed from the reaction of the acylating agent and the polyamine. Apparently the Examiner feels these amounts of water are equivalent or comparable to those presently claimed. Further the Examiner asserts that it would be reasonable to assume that the Dorer example compositions would have the presently claimed total acid number due to the similarity in reactants and conditions.

Dorer referred to his hydrocarbyl groups as containing at least 30 carbon atoms. His examples were of higher molecular weight, e.g. more than 30 carbon atoms, although the exact molecular weight is not readily calculated by the current applicant from the description in the examples of Dorer. Applicant has now limited claims 1, 23, and 24 to 12 to 24 carbon atoms for the hydrocarbyl group of the acylating agent, which clearly distinguishes the currently claimed hydrocarbyl groups from those of the cited reference. The range of 12-24 carbon atoms is from claim 3. Applicant asserts there is no teaching in the Dorer reference of a reason to remove water from the currently claimed reaction product of hydrocarbyl substituted succinic acid of 12-30 carbon atoms with a polyol, polyamine or hydroxylamine to the same level of water removal or total acid number as the examples of Dorer (which had 30 or more carbon atoms in the hydrocarbyl group).

Applicant requests a notice of allowance of the remaining claims after amendment.

Respectfully submitted,

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Marked Up Version of Claims

1. (amended) A composition comprising a partially dehydrated product made by:
 - (III) Reacting (A) a hydrocarbyl substituted succinic acid or anhydride with (B) a polyol, a polyamine, a hydroxylamine, or a mixture of two or more thereof, to form a first intermediate product comprising: an ester, partial ester or a mixture thereof when (B) is a polyol; an amide, imide, salt, amide/salt, partial amide or mixture two or more thereof when (B) is a polyamine; or an ester, partial ester, amide, partial amide, amide/salt, imide, ester/salt, salt or a mixture of two or more thereof when (B) is a hydroxylamine, a mixture of a polyol and a polyamine, a mixture of polyol and a hydroxylamine, a mixture of a polyamine and a hydroxylamine, or a mixture of a polyol, a polyamine and a hydroxylamine; the hydrocarbyl substituent of said acid or anhydride having an average of about 12 [8] to about 24 [50] carbon atoms; and
 - (IV) heating said first intermediate product at an effective temperature to form a second intermediate product with water of reaction being formed, and separating a portion of said water of reaction from said second intermediate product to form said partially dehydrated product, when (A) is said succinic anhydride the amount of water of reaction that is separated is from about 0.2 to about 0.9 moles of said water of reaction per equivalent of said succinic anhydride, when (A) is said succinic acid the amount of water of reaction that is separated is from about 1.2 to about 1.9 moles of said water of reaction per equivalent of said succinic acid, said partially dehydrated product having a total acid number in the range of about 20 to about 100 mg of KOH/g.
11. (amended) The composition of claim 1 wherein said polyol is a polyhydric alcohol having at least three hydroxyl groups, some of the hydroxyl groups being esterified with an aliphatic monocarboxylic acid [of about 8 to about 30 carbon atoms], at least two of the hydroxyl groups not being esterified.
23. (amended) A composition comprising a partially dehydrated product made by:
 - (I) reacting (A) a hydrocarbyl substituted succinic acid or anhydride with (B) a polyamine, a hydroxylamine, a mixture of a polyol and a polyamine, a mixture of polyol and a hydroxylamine, a mixture of a polyamine and a hydroxylamine, or a mixture of a polyol, a polyamine and a hydroxylamine, to form a first intermediate product

comprising: an amide, imide, salt, amide/salt, partial amide or mixture two or more thereof when (B) is a polyamine; or an ester, partial ester, amide, partial amide, amide/salt, amide, ester/salt, salt or a mixture of two or more thereof when (B) is a hydroxylamine, a mixture of a polyol and a polyamine, a mixture of a polyol and a hydroxylamine, a mixture of a polyamine and a hydroxylamine, or a mixture of a polyol, a polyamine and a hydroxylamine; the hydrocarbyl substituent of said acid or anhydride having an average of about 12 [8] to about [50] 24 carbon atoms; and

(II) heating said first intermediate product at an effective temperature to form a second intermediate product with water of reaction being formed, and separating a portion of said water of reaction from said second intermediate product to form said partially dehydrated product, when (A) is said succinic anhydride the amount of water of reaction that is separated is from about 0.2 to about 0.9 moles of said water of reaction per equivalent of said succinic anhydride, when (A) is said succinic acid the amount of water of reaction that is separated is from about 1.2 to about 1.9 moles of said water per equivalent of said succinic acid, said partially dehydrated product having a total acid number in the range of about 20 to about 100 mg of KOH/g.

24. (amended) A process, comprising:

(I) reacting (A) a hydrocarbyl substituted succinic acid or anhydride with (B) a polyol, a polyamine, a hydroxylamine, or a mixture of two or more thereof, to form a first intermediate product comprising: an ester, partial ester or mixture thereof when (B) is a polyol; an amide, imide, salt, amide/salt, partial amide or mixture of two or more thereof when (B) is a polyamine; or an ester, partial ester, amide, partial amide, amide/salt, imide, ester/salt, salt or a mixture of two or more thereof when (B) is a hydroxylamine, a mixture of a polyol and a polyamine, a mixture of a polyol and a hydroxylamine, a mixture of a polyamine and a hydroxylamine, or a mixture of a polyol, a polyamine and a hydroxylamine; the hydrocarbyl substituent of said acid or anhydride having an average of about 12 [8] to about 24 [50] carbon atoms; and

(II) heating said first intermediate product at an effective temperature to form a second intermediate product with water of reaction being formed, and separating a portion of said water of reaction from said second intermediate product, when (A) is said succinic anhydride the amount of water of reaction that is separated is from about 0.2 to

about 0.9 moles of said water of reaction per equivalent of said succinic anhydride, when (A) is said succinic acid the amount of water of reaction that is separated is from about 1.2 to about 1.9 moles of said water of reaction per equivalent of said succinic acid, said partially dehydrated product having a total acid number in the range of about 20 to about 100 mg of KOH/g.